



LHR Farms

November 25, 2009

Introduction

In early 2008, a local resident submitted a petition to the Agency for Toxic Substances and Disease Registry (ATSDR) asking that they investigate potential adverse health effects from exposure to contaminants generated by LHR Farms, a wastewater treatment facility. The petitioner noted that in the last two years, the odor, flies, and amount of hauler traffic to LHR Farms have increased and is concerned that residents are being exposed to potentially harmful contaminants through private drinking water wells and outdoor air.

In April 2008, the Georgia Department of Human Resources, Division of Public Health (GDPH), Georgia Environmental Protection Division (GEPD), and ATSDR met to discuss the petition. Under a cooperative agreement with ATSDR, GDPH agreed to conduct a public health assessment on LHR Farms in response to the petition to help determine the nature and extent of exposure to hazardous chemicals in the environment, whether exposure might result in adverse health effects, and assess the concerns and health education needs of the public.

Site Description and History

LHR Farms, Inc. is located in White County, Georgia. The 400 acre farm is bounded by Joe Turner Road to the south, County Line Church Road to the east, Industrial Avenue to the north, and Highway 129 to the west. Residential properties are located south, east, and west of LHR Farms. An industrial park is located to the north, which includes a solid waste transfer station.

LHR Farms began operations in 1996. The farm processes septic tank wastewater and other biodegradable organic wastewater from restaurants, homeowners, and industrial facilities across northeast Georgia. Processed wastewater is used as fertilizer on restricted areas of the farm. Materials not suitable for fertilizer are sent to local landfills or other permitted treatment facilities. The site consists of several building structures and approximately 400 acres of land used for forest, agriculture, pasture, stables, a horse riding pavilion, cattle, chicken houses, and a facility available to the public for community gatherings.

There are no physical hazards associated with the site. The facility has restricted access and is surrounded by fencing. There is no indication that trespass occurs and current restriction measures are considered adequate.

Environmental Sampling

Under GEPD oversight, soil, groundwater, surface water, and sediment were sampled at LHR Farms in March 2008. All samples were analyzed for metals (both dissolved and total metals): arsenic, cadmium, copper, lead, nickel, selenium, zinc, and mercury. Seventeen soil samples were taken from various locations within the 90-acre spray field where land application of treated wastewater occurs. One sample was taken from each of the three on-site monitoring wells. Two upstream and two downstream surface water samples and sediment samples were collected from a surface water drainage ditch located on the eastern boundary of LHR Farms.

Results

No metals were detected in soil above regulatory levels or health based screening values, and the levels found are consistent with normal background levels found in Georgia soil. No metals were detected in the upstream and downstream surface water or sediment samples exceeding regulatory levels or health based screening values.

No metals were detected in groundwater samples above regulatory levels. Two metals, arsenic and cadmium, were not detected, but the detection limits used for the analyses are slightly above the lowest health based screening levels for these metals. However, because these metals were not detected at detection levels far below the lowest health based screening values for on-site soil and sediment (averaging approximately 4 times below for arsenic, and two times below for cadmium), it was determined that arsenic and cadmium are not likely present in on-site groundwater monitoring wells at levels above health based screening values.

Both the monitoring wells and the on-site drinking water well are sampled monthly at LHR Farms to assess water quality. On-site drinking water sample results continue to meet federal drinking water standards. All but one monitoring well continue to meet federal drinking water standards. One monitoring well has repeatedly had a nitrate level slightly above the federal drinking water standard and lowest health based screening level. The highest nitrate concentration detected is 11.1 parts per million (ppm) and the regulatory standard (maximum contaminant level) and lowest health based screening level are both 20 ppm. It is important to note that no



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exposure to on-site groundwater at LHR Farms is occurring.

Because of community concerns that operations at LHR Farms might be contaminating local drinking water supplies, in April 2009, GEPD sampled drinking water wells at three residences near LHR Farms. The samples were analyzed for the metals listed above and for additional metals, ammonia, nitrate/nitrite, Kjeldahl nitrogen, phosphorous and fecal bacteria (coliform). No contaminants were detected at levels above federal drinking water standards.

Outdoor air near LHR Farms was also sampled, and volatile organic compounds (VOCs) were detected and related to fungal species that produce these VOCs. VOCs detected include ethanol, isopropyl alcohol, acetone, 2-butanone, ethyl acetate, iso-octane, heptane, toluene and others. In all cases, the air concentrations were between 5 to 500 times below health based screening values.

Conclusions

Based on the results of the environmental sampling, Needs Assessment survey, cancer data analyses, and review of community concerns, GDCPH has categorized LHR Farms as **no public health hazard** to residents living near the site, and adjacent private industry employees. Specifically:

- Exposure to soil, groundwater, surface water, and sediment located on or underneath the property of LHR Farms poses no public health hazard, because no one consumes groundwater from the property and public contact with the property is limited.

- Off-site groundwater is not suspected of being contaminated by heavy metals from operations conducted at LHR Farms.
- For many residents, odors may have a negative impact on their health and quality of life. However, there is no indication that permanent health effects (i.e., physiological damage to organs) will occur from exposure to odors in the vicinity of LHR Farms. Symptoms may result from exposure to the odors, but are expected to cease when the odor is eliminated.
- Several other possible sources of odors have been identified within close proximity to LHR Farms.
- Based on facility operations, professional knowledge about similar facilities and the data available from inspection reports conducted regularly at the facility, LHR Farms is not suspected of releasing chemical or biological emissions to air that could cause or contribute to chronic health problems.

Recommendations

- Under GEPD oversight, LHR Farms should continue to test on-site drinking water and groundwater monitoring wells to ensure the protection of groundwater resources in the vicinity of LHR Farms.
- GEPD should be contacted if residents have any concerns regarding the monitoring of fecal coliform bacteria and other microbes during LHR Farms operations.
- White County should work to reduce odors generated at the White County Waste Transfer Station.
- The Georgia Comprehensive Cancer Registry should continue to monitor bladder and other cancer rates in White County.